PREPRODUCTION INITIATIVE-NELP
LOW-EMISSIONS DIESEL (A/M32C-17)
TEST PLAN

SITE: NAS NORTH ISLAND

1.0 OBJECTIVE

This test plan describes the test procedure for gathering performance data on low-emissions diesel engines installed on an A/M32C-17 portable air conditioner and on an A/M27T-5 portable hydraulic power supply.

2.0 BACKGROUND

Increasingly strict environmental regulatory requirements regarding air pollution and hazardous waste generation are limiting the use of current support equipment (SE) unless modifications are made. Rather than entering into acquisition programs for new equipment, two types of SE were selected to confirm the feasibility of continued operation under stricter environmental regulations with engine modifications. The A/M27T-5 portable hydraulic power supply powered by a Model 3-53 Detroit Diesel engine and the A/M32C-17 portable air conditioner powered by a Model 6V-71 Detroit Diesel engine were selected for modification and testing. Two A/M27T-5s and two A/M32C-17s were modified.

3.0 TEST PLAN

3.1 Approach

Testing will be conducted for three months in order to gather data from an equal number of modified and unmodified A/M27T-5s and A/M32C-17s being used under normal operating conditions. Data will be gathered, recorded, and reported according to this test plan. Four A/M27T-5s (two modified and two unmodified) and four A/M32C-17s (two modified and two unmodified) are designated as test units. The following data will be gathered during the test period:

- air emissions
- engine noise
- fuel consumption
- engine servicing
- engine maintenance
- operational factors.

3.2 Test Procedures

The following test procedures specify how data is to be collected. ASC Sharp (extension 6713) will monitor all on-site testing.

3.2.1 Air Emissions

The Public Works Center (PWC), Transportation Division will conduct all air emissions testing. Opacity measurements will be taken on each test unit (modified and unmodified) at the beginning and end of the test period. Test data will be forwarded as specified in paragraph 4.1. The PWC point of contact (POC) is Bob Van Gorder (extension 8065).

3.2.2 Engine Noise

Engine noise measurements will be taken by an industrial hygienist. The industrial hygienist POC is LT Breay (extension 1084). The following measurements will be taken.

Location	Measurements
Operator's Station	1
10-Foot Radius	4
20-Foot Radius	4

3.2.3 Fuel Consumption

The fuel tank should be filled to capacity at the beginning and end of the test period. Use Table 1 to record all fueling information during the test period—including the final fueling at the end of the test period.

3.2.4 Engine Servicing

All engine servicing performed during the test period should be recorded on Table 1. Engine service includes the replacement of engine oil, filters, belts, and other required preventive maintenance service items. All consumable items that were replaced should also be recorded—including the part number, national stock number, description, and dollar value.

3.2.5 Engine Maintenance

All required engine maintenance should be recorded on Table 1.

3.2.6 Operational Factors

All factors affecting the operation of the modified test units should be recorded on Table 2. Items such as difficult-to-operate controls, necessary information not provided by the operations or maintenance manuals, and safety concerns should be recorded.

3.3 Data Collection

Data collection shall be in accordance with the requirements of this test plan. ASC Sharp will supervise reporting requirements and will forward all data in accordance with paragraph 4.1.

4.0 REPORTING TEST DATA

The data entry forms are a concise method of data collection. Forms should be completed on a daily basis. Data will be collected for 1 year. During this time, periodic status reports on the testing will be submitted to NAWCADLKE. The final report will include detailed results and observations, assess the efficiency and cost-effectiveness of the unit, and evaluate its ability to interface with site operations.

Table 1. Data Sheets

SE Type: ❑ A/M27T-5
❑ A/M32C-17

Date (d/m/y)	Engine Serial Number	Run Time (Use 24-hour clock)		Total Run Time (hours:minutes)	Engine Service Use decimals for unit parts (*e.g.*, 6.5 gallons)			Name and Pay Grade of Operator	Comments (Use additional sheets if required)
		Start	Finish		Fuel	Oil	Coolant		

Table 2. Comments and Observations

Date: _____

Name/Pay Grade: _____

Telephone Number: _____

SE Description: (*Check appropriate box*):

- ❑ Modified A/M32C-17
- ❑ Unmodified A/M32C-17

- ❑ Modified A/M27T-5
- ❑ Unmodified A/M27T-5

Engine Serial Number: _____

Comments and Observations:

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_____

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